MYCOTAXON

ISSN (print) 0093-4666 (online) 2154-8889 © 2016. Mycotaxon, Ltd.

July–September 2016—Volume 131, pp. 547–551

http://dx.doi.org/10.5248/131.547

Phaeomonilia nanningensis sp. nov. and a new *Craspedodidymum* record from southern China

Chun-Ling Yang, Jin-Ye Wang, Ji-Wen Xia,
Ying-Rui Ma, Jian-Mei Gao & Xiu-Guo Zhang*

Department of Plant Pathology, Shandong Agricultural University, Taian, Shandong 271018, China

*Correspondence to: *sdau613@163.com, zhxg@sdau.edu.cn*

Abstract—A new species, *Phaeomonilia nanningensis*, is described and illustrated from specimens collected on dead branches in Guangxi Province. The fungus is characterized by ellipsoid, catenate, pale brown to brown conidia formed by thallic disarticulation of fertile branches on macronematous conidiophores. A key to the four described species of *Phaeomonilia* is also provided. *Craspedodidymum abigianense* is newly recorded from China.

Key words—conidial fungi, taxonomy

Introduction

Phaeomonilia was established by Castañeda-Ruíz et al. (2007) with two species: *P. pleiomorpha* R.F. Castañeda et al. (type species) and *P. corticola* (R.F. Castañeda) R.F. Castañeda et al. [≡ *Monilia corticola* R.F. Castañeda]. Subsequently, Ma et al. (2015) described a third species, *P. guangxiensis* Y.R. Ma & X.G. Zhang. The genus is mainly characterized by macronematous conidiophores with unicellular globose colorless conidia formed by thallic disarticulation of fertile branches and by the *Stylaspergillus*-like synanamorph. It is similar to *Botryomonilia* Goos & Piroz. (Goos & Pirozynski 1975) in its branching system, which narrows progressively towards the apex before the maturation, and the fragmentation or disarticulation process that produces the thallic–arthric conidia, as described by Kendrick (2003). *Botryomonilia*, however, produces conidia that are connected by an isthmus (Castañeda-Ruíz et al. 2007).

During our ongoing survey of fungi associated with woody debris in the tropical forests of Guangxi and Hainan provinces, two species were collected

on decaying twigs and dead stems. One of them, with morphological characteristics of *Phaeomonilia* (Castañeda-Ruíz et al. 2007), is described here as a new species, *P. nanningensis;* the other was identified as *Craspedodidymum abigianense*, a new record for China. Voucher specimens are conserved in the Herbarium, Department of Plant Pathology, Shandong Agricultural University, Taian, China (HSAUP) and Herbarium Mycologium, Chinese Academy of Sciences, Beijing, China (HMAS).

Phaeomonilia nanningensis C.L. Yang & X.G. Zhang, **sp. nov.** Fig. 1

MycoBank MB 818085

Differs from *Phaeomonilia corticola* by its larger, ellipsoid conidia; and from *P. guangxiensis* by its larger, pale brown to brown , ellipsoid conidia.

Type: China, Guangxi Province, Nanning, Longhushan, on dead stems of unidentified broadleaf tree, 8 Dec. 2015, C.L. Yang (**holotype**, HSAUP H7858; **isotype**, HMAS 245606).

Etymology: *nanningensis*, in reference to the type locality, Nanning.

Colonies on the natural substratum effuse, circumvolute, twinkling, brown. Mycelium mostly superficial but some immersed; superficial hyphae pale brown, branched, septate, cylindrical, smooth. Conidiophores macronematous, mononematous, erect, straight or flexuous, cylindrical, septate, smooth, about 410 µm long, 9–10.5 µm diam. at the base, brown to pale brown, mostly dichotomously branched towards the apex. Conidiogenous cells holothallic, determinate, inwardly brown to pale brown, smooth, lageniform to subulate. Ramoconidia and conidia thallic-arthric, catenate, ellipsoid, broadly and more or less Y-shaped, 13.5–25 × 9–13 µm, brown to pale brown, dry, smooth, forming by disarticulation of the conidiogenous branches.

Comments – *Phaeomonilia nanningensis* slightly resembles *P. corticola* and *P. guangxiensis* in conidial shape. However, compared with *P. nanningensis*, the conidia of *P. corticola* are ellipsoid to doliiform and smaller (5.5–16.0 × 4–5 µm; Castañeda-Ruíz et al. 2007); and the conidia of *P. guangxiensis* are colorless, ellipsoid to globose, and smaller (11–14.5 × 7–11 µm; Ma & Zhang 2015).

Key to species of *Phaeomonilia*

1. *Stylaspergillus*-like synanamorph present ..... *P. pleiomorpha*
1. No synanamorph present 2
2. Conidia globose, 7–11 × 11–14.5 µm ..... *P. guangxiensis*
2. Conidia doliiform or ellipsoid 3
3. Conidia doliiform or ellipsoid, 5.5–16 × 4–5 µm ..... *P. corticola*
3. Conidia ellipsoid and larger, 13.5–25 × 9–13 µm ..... *P. nanningensis*

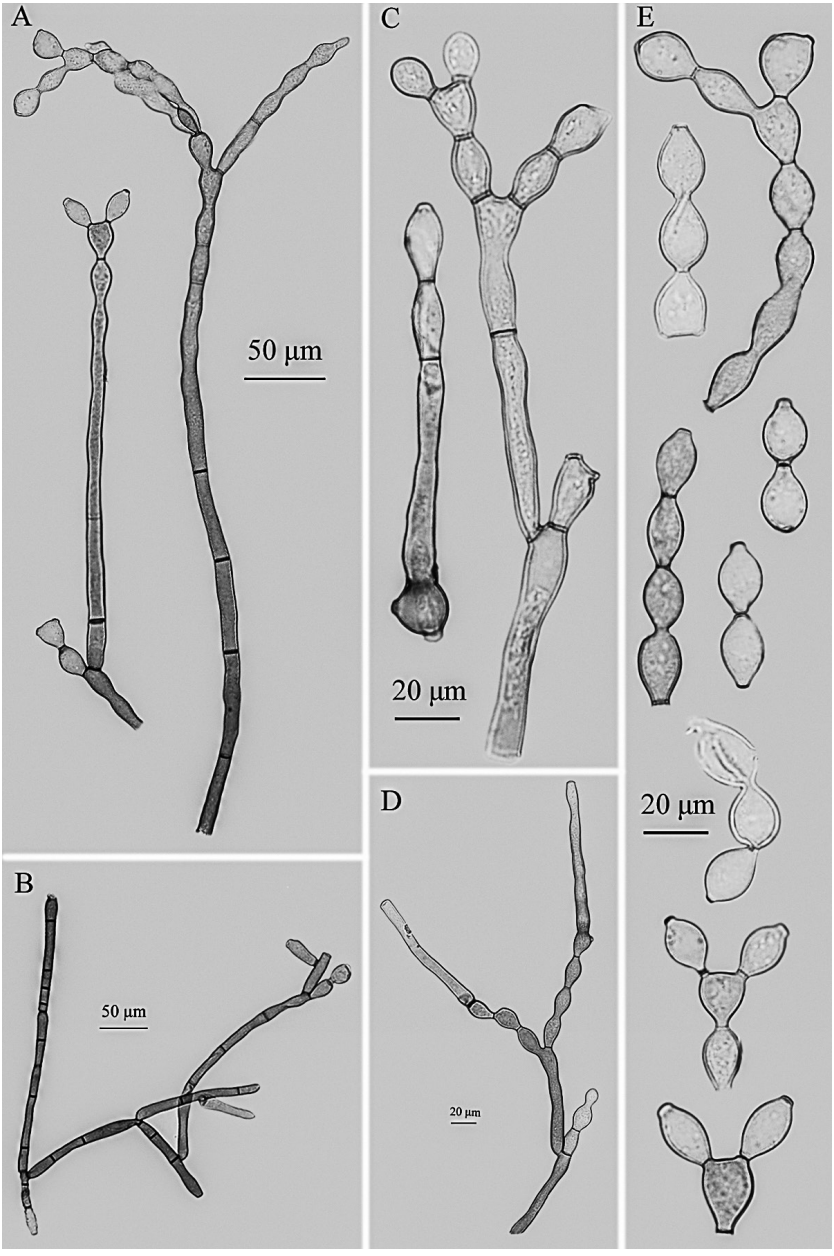

Fig. 1. *Phaeomonilia nanningensis* (holotype, HSAUP H7858).
A, B. conidiophores and conidia. C, D. conidiogenous cells and conidia. E. conidia.

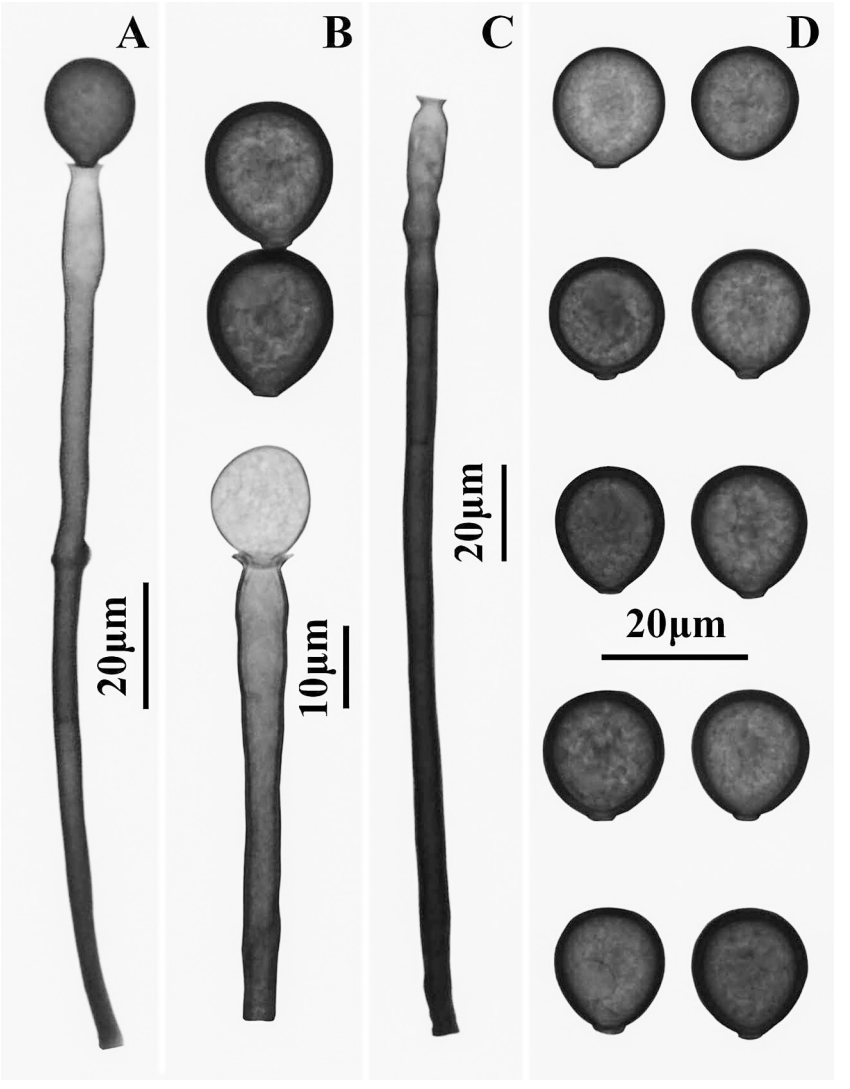

Fig. 2. *Craspedodidymum abigianense* (HSAUP H7566).
A: conidiophore and conidium. B: conidiogenous cell and conidia. C: conidiophore. D: conidia.

Craspedodidymum abigianense Lunghini & Onofri, Trans. Br. Mycol. Soc. 74: 208 (1980) Fig. 2

Colonies on the natural substratum effuse, dark brown. Conidiophores macronematous, mononematous, straight or slightly flexuous, dark brown,

4–6-septate, 120–170 × 5.2–7 μm, tapered gradually towards the apex. Conidiogenous cells terminal, ellipsoidal, monophialidic or rarely polyphialidic, percurrent, 20–30 × 6.5–8 μm, paler brown, with a distinct funnel-shaped collarette, 1.5–2.0 × 5.5–7.5 μm. Conidia acrogenous, solitary, spherical or more often obovoid, smooth, dark brown, generally paler when young, aseptate, 15.5–18.5 × 5.5–16.5 μm, papillate at the base.

Specimen Examined: **CHINA**, **Hainan Province**, Diaoluoshan, on dead stems of unidentified broadleaf tree, 26 May 2014, X.Y. Li (HSAUP H7566).

Comments – The genus *Craspedodidymum* was established by Holubová-Jechová (1972), with *C. elatum* Hol.-Jech. as type species. *Craspedodidymum abigianense,* described by Lunghini & Onofri (1980) from Côte d'Ivoire, West Africa, is reported for the first time from China. Our Chinese specimen closely matched the original description by Lunghini & Onofri (1980), but the type material had longer conidiophores (225–250 × 4.5–5.5 μm) and conidia that were smaller (14.5–16.5 × 13.5–14.5 μm) and slightly lighter in colour.

Acknowledgments

The authors express gratitude to Dr. Rafael F. Castañeda-Ruiz and Dr. Eric H.C. McKenzie for serving as pre-submission reviewers and for their valuable comments and suggestions. This project was supported by the National Natural Science Foundation of China (Nos. 31093440, 31230001, 31493010, 31493011) and the Ministry of Science and Technology of the People's Republic of China (Nos. 2006FY120100).

Literature cited

Castañeda-Ruíz RF, Heredia-Abarca G, Arias RM, Saikawa M, Minter DW, Stadler M. 2007. Anamorphic fungi from submerged plant material: *Phaeomonilia pleiomorpha*, *P. corticola* and *Cacumisporium pleuroconidiophorum*. Mycotaxon 100: 327–336.

Goos RD, Pirozynski KA. 1975. Fungi of Barro Colorado Island: new and interesting hyphomycetes. Canadian Journal of Botany 53: 2927–2932. http://dx.doi.org/10.1139/b75-322

Holubová-Jechová V. 1972. *Craspedodidymum*, new genus of phialosporus hyphomycetes. Česká Mykologie 26: 70–73.

Kendrick B. 2003. Analysis of morphogenesis in hyphomycetes: new characters derived from considering some conidiophores and conidia as condensed hyphal systems. Canadian Journal of Botany 81: 75–100. http://dx.doi.org/10.1139/b03-008

Lunghini D, Onofri S. 1980. *Craspedodidymum abigianense* sp. nov., a new dematiaceous Hyphomycete from Ivory Coast forest litter. Transactions of the British Mycological Society 74: 208–211. http://dx.doi.org/10.1016/S0007-1536(80)80033-7

Ma YR, Xia JW, Zhang XG, Castañeda-Ruiz RF. 2015. New species of *Phaeomonilia* and *Mirandina* from dead branches in China. Mycotaxon 130: 775–781. http://dx.doi.org/10.5248/130.775